Please replace the paragraph beginning on page 9, line 3 with the following:

Refer now to Figures 6A and 6B showing the process of the present invention. At step 605 the process is started. A step 610, individual frames are extracted from the library. As depicted in Figures 2A and 2B, frames 200 and 250 were extracted from the library. At step 615, the extracted individual frames are converted to a black and white format. At step 620, edge detection is performed by detecting change in intensity from one pixel to adjacent pixels. As depicted in Figures 3A and 3B, the outlines of various structures are detected. At step 625, lines are drawn at changes of intensity as depicted in Figure 3. At step 630, regions of interest are determined. At step 635, the regions of interest are correlated as explained with reference to Figures 7A and 7B. At step 640, image registration is performed by compensating for platform/camera movement. The registration process accounts for motion of the camera by determining the frame-to-frame x-y offsets, zoom and rotation. At step 645, frame overlay is performed. At step 650, the video mosaic can be viewed. At step 655 the process is ended.

A2 cancel.

Please replace the paragraph beginning on page 9, line 18 with the following:

Refer now to Figure 7 where at step 705 the process is started. At step 710, the centroid region of interest (ROI) is calculated. At step 715, the centroid is compared with centroids of the next adjacent frame. At step 720, centroids are selected which are within error tolerances. At step 725, there is a full correlation of average distance from every pixel and corresponding structure. At step 730, if the difference is consistent the structure is identified as a potential match. At step 735, steps 705-730 are repeated for other structures that fall within error tolerance. At step 740, the stored difference calculations are analyzed and select matches are based on pixels within structure having the most consistent differences. The analysis includes looking for frame-to-frame location as indicated by the difference calculation. This consistency will yield x-y translation, rotation and focal length changes.

A3 cancl.

Please replace the paragraph beginning on page 10, line 1 with the following:

Now referring to Figure 8, the process is started at step 805. At step 810, the frame is searched for an edge. At step 815, adjacent "on" pixels are followed until an "off" pixel is detected. At step 820, the locations of the "on" are determined pixels and these locations are stored. At step 825, the number of "on" pixels is counted within the structure which must exceed

A4 contd

A4 cancel

a preset threshold. At step 830, the value of the pixels within a designated structure is changed to avoid use in future structures. At step 835, steps 805-830 are repeated until the entire images in structure detected. At step 840, the process is ended.

Please replace the paragraph beginning on page 10, line 9 with the following:

A5 cancel

As depicted in Figure 9, five video frames are extracted which were taken at 30 frames a second. Thus, there are video frames 910, 920, 930, 940 and 950 which are extracted from a data library. The data library can be onboard the UAV.

Please replace the paragraph beginning on page 10, line 25 with the following:

A6 cancel.

Referring now to Figure 14, a flow diagram summarizing the steps of the present invention is illustrated. At step 1405, the process is started. At step 1410, a low resolution image registration is performed for a sequence of images. At step 1415, each of the images upsampled. As depicted in Figures 10 and 11, the images are upsampled by factor 4. Other upsampling factors could be used, but the factor of 4 appears to be optimal, yielding the most consistent results. Less than 4 could be used, but the idea is to create the highest resolution possible. Using a factor greater than 4 will result in diminishing returns, in that the amount of memory and processor capacity required will not necessarily produce a sufficiently higher quality image. At step 1420, an x, y registration is performed for the upsampled images. At step 1425, the upsampled images are then aligned using a simple correlation technique to determine the x-y frame-to-frame offsets. At step 1430, these aligned, upsampled images are then combined into a high resolution output image by performing a pixel-by-pixel average across all 5 of the upsampled aligned images. At step 1435, the process is ended.